



Bison Oil Well Cementing  
1547 Gaylord Street  
Denver, CO 80206

FIELD INVOICE #

666113

FIELD INVOICE

WELL NO. AND FARM		COUNTY	STATE	DATE	Contractor
Babcock 19N-34HZ		Weld	Colorado	4/20/2017	WMO 252
CHARGE TO		WELL LOCATION			
Anadarko Petroleum Corporation		Section	TWP	RANGE	
PO Box 4995		4	2N	67W	
The Woodlands, TX 77387		DELIVERED TO		LOCATION 1	CODE
		cr. 24 & cr. 19		Greeley	
		SHIPPED VIA		LOCATION 2	CODE
		4023/4024/4030		Plateville	
		TYPE AND PURPOSE OF JOB		LOCATION 3	CODE
		SURFACE		Greeley	
				WELL TYPE	CODE
ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
<b>PUMP CHARGE</b>					
	SURFACE	1		\$ 952.00	\$ 952.00
<b>MILLEAGE CHARGE</b>					
	Pickup	52		\$ 1.22	\$ 63.44
	Truck/Equipment	52		\$ 3.23	\$ 167.96
	Truck/Equipment	52		\$ 3.23	\$ 167.96
	Truck/Equipment	52		\$ 3.23	\$ 167.96
<b>CEMENT CHARGE:</b>					
	BFN III	727		\$ 14.69	\$ 10,679.63
<b>ADDITIVES CHARGE:</b>					
	Red Dye	16	oz	\$ 15.00	\$ 240.00
<b>FLOAT EQUIPMENT:</b>					
<b>OTHER CHARGES:</b>					
	Wait Time	1	hour	\$ 250.00	\$ 250.00
<b>SUB TOTAL</b>				\$	12,688.95
<b>TAX</b>				\$	-
<b>TOTAL</b>				\$	12,688.95

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1 1/2% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

BABCOCK 19N-33HZ RIG: WhiteMtn 252

CRYSTAL AGUILA. USER ID ZCMK6

CONSULTANT NAME: Lara F.

GL CODE: 80012090 AFE#2121896.DRL

DATE: 4-20-17 SIGNATURE: [Signature]

SUBJECT TO CORRECTION

Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledge and specifically agree to the terms and conditions of this invoice, including, without limitation, the provisions on the reverse hereof which include the release and indemnity.



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/20/2017  
Invoice #: 666113  
API#: 05-123-43808  
Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation

Well Name: Babcock 19N-34HZ

County: Weld  
State: Colorado  
Sec: 4  
Twp: 2N  
Range: 67W

Consultant: Lane  
Rig Name & Number: WMO 252  
Distance To Location: 26 Miles  
Units On Location: 4023/4019/4030  
Time Requested: 14:30  
Time Arrived On Location: 13:45  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,864  
Total Depth (ft) : 1874  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 80  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 10

Max Rate:  
Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 0.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.10 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 61.05 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 1002.68 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 1082.83 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 192.85 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 727 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 129.43 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 141.47 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1375.07 PSI

## Pressure of the fluids inside casing

**Displacement:** 784.75 psi

**Shoe Joint:** 32.46 psi

**Total** 817.21 psi

**Differential Pressure:** 557.86 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 320.90 bbls

X

Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



Date \_\_\_\_\_



# Babcock 19N-34HZ

